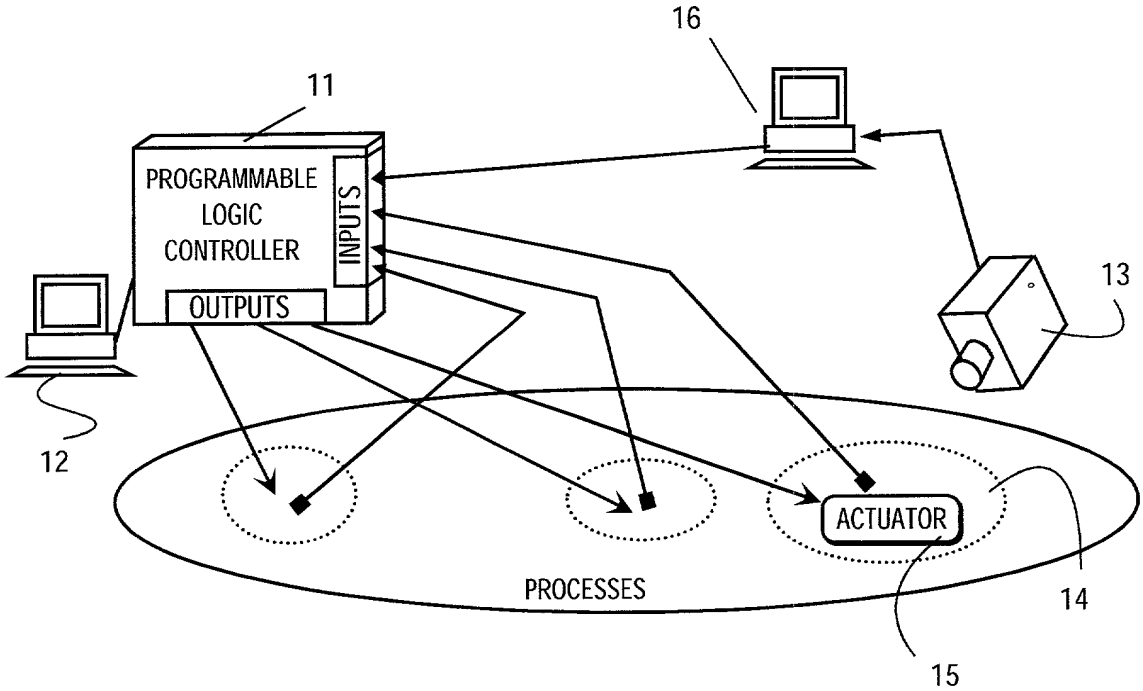


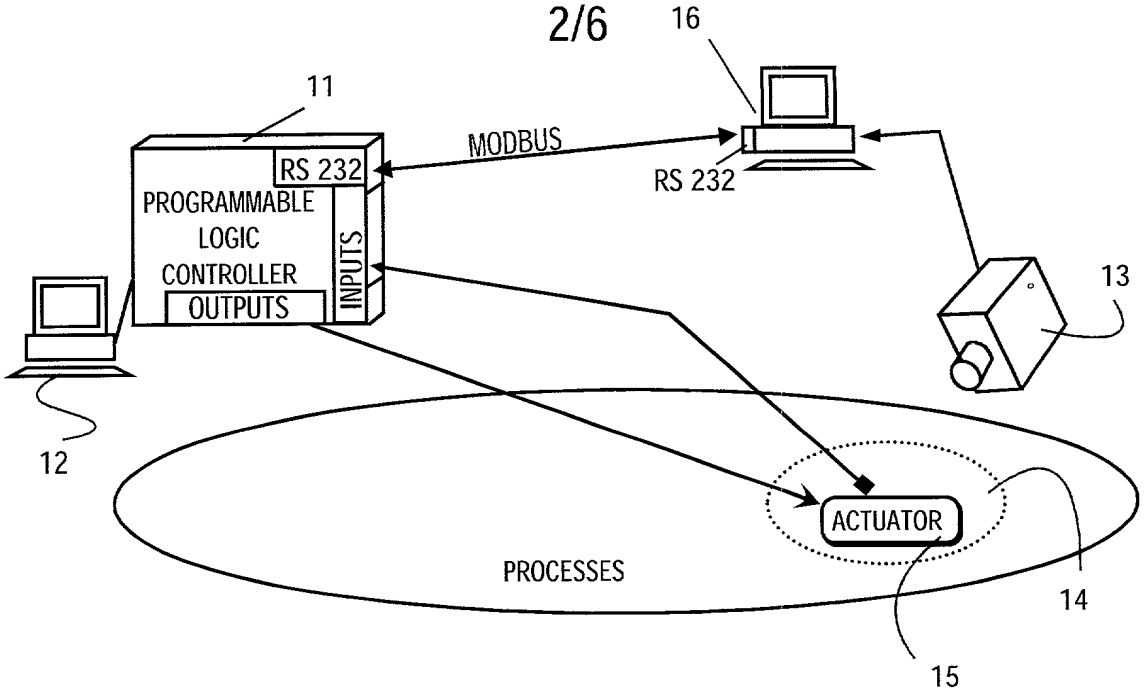
PRIOR ART

FIG. 1

START	ADDRESS	FUNCTION	DATA	ERROR CORRECTION	END

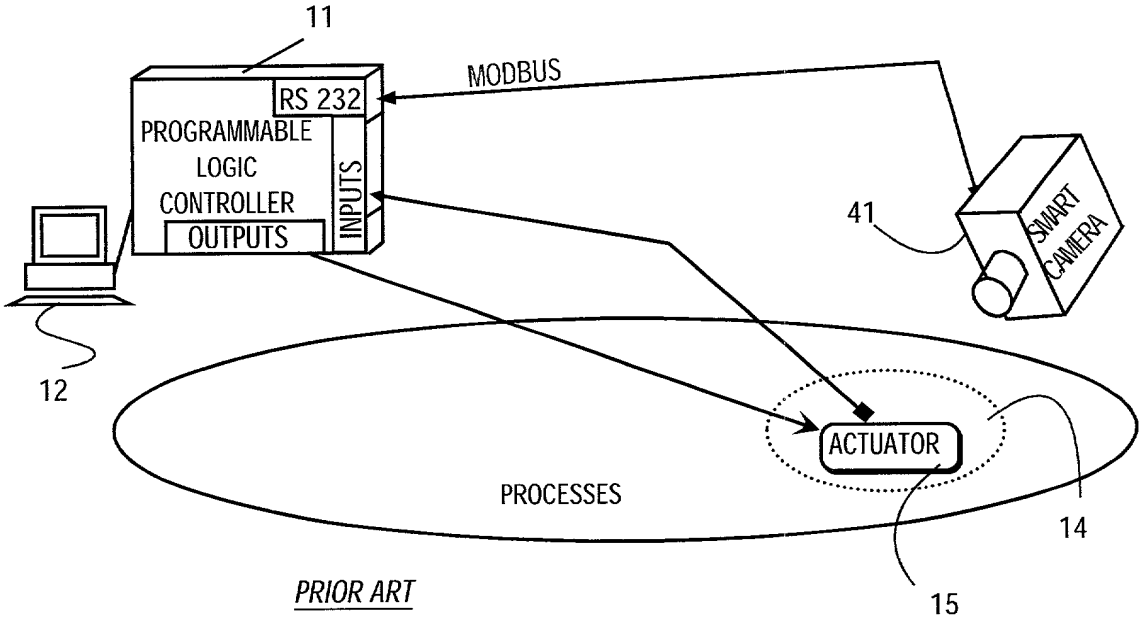
PRIOR ART

FIG. 2



PRIOR ART

Fig. 3



PRIOR ART

Fig. 4

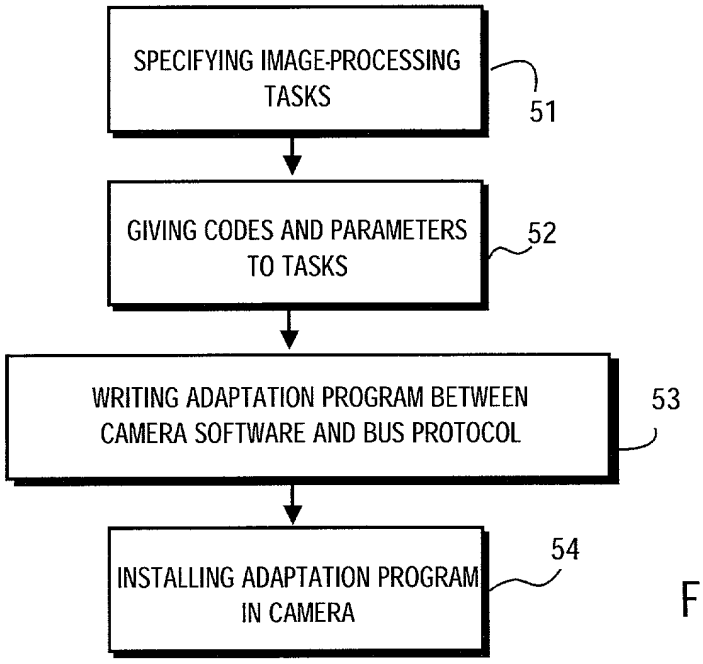

SPECIFYING IMAGE-PROCESSING TASKS
51
GIVING CODES AND PARAMETERS TO TASKS
52
WRITING ADAPTATION PROGRAM BETWEEN CAMERA SOFTWARE AND BUS PROTOCOL
53
INSTALLING ADAPTATION PROGRAM IN CAMERA
54

Fig. 5

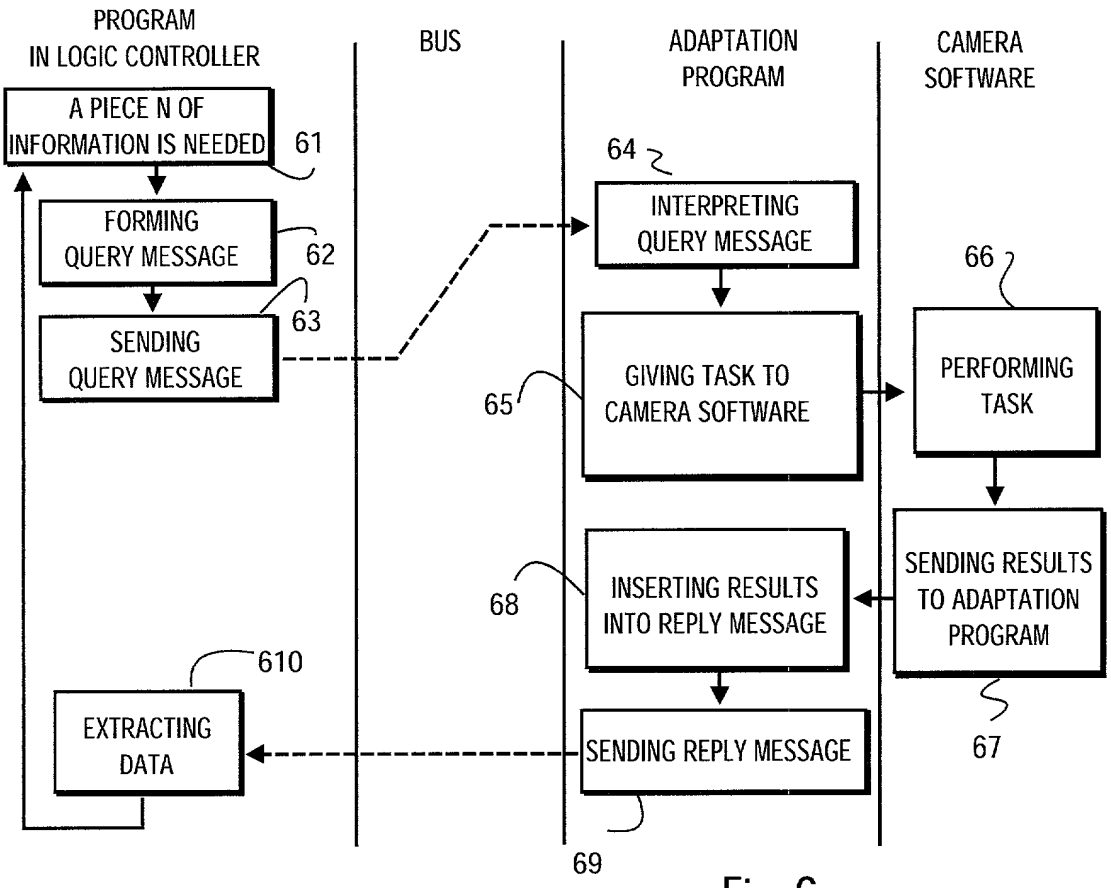

PROGRAM IN LOGIC CONTROLLER
BUS
ADAPTATION PROGRAM
CAMERA SOFTWARE
A PIECE N OF INFORMATION IS NEEDED
61
FORMING QUERY MESSAGE
62
SENDING QUERY MESSAGE
63
64
INTERPRETING QUERY MESSAGE
65
GIVING TASK TO CAMERA SOFTWARE
66
PERFORMING TASK
68
INSERTING RESULTS INTO REPLY MESSAGE
SENDING RESULTS TO ADAPTATION PROGRAM
67
610
EXTRACTING DATA
SENDING REPLY MESSAGE
69

Fig. 6

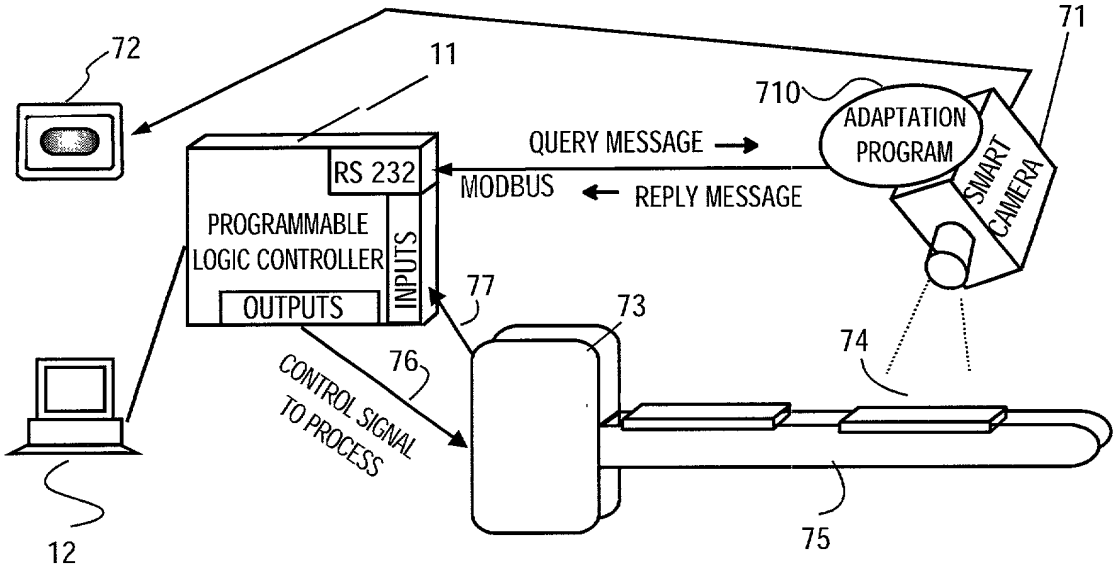

72
11
71
710
ADAPTATION PROGRAM
SMART CAMERA
QUERY MESSAGE
RS 232
MODBUS
REPLY MESSAGE
PROGRAMMABLE LOGIC CONTROLLER
INPUTS
OUTPUTS
77
73
74
76
CONTROL SIGNAL TO PROCESS
12
75

Fig. 7

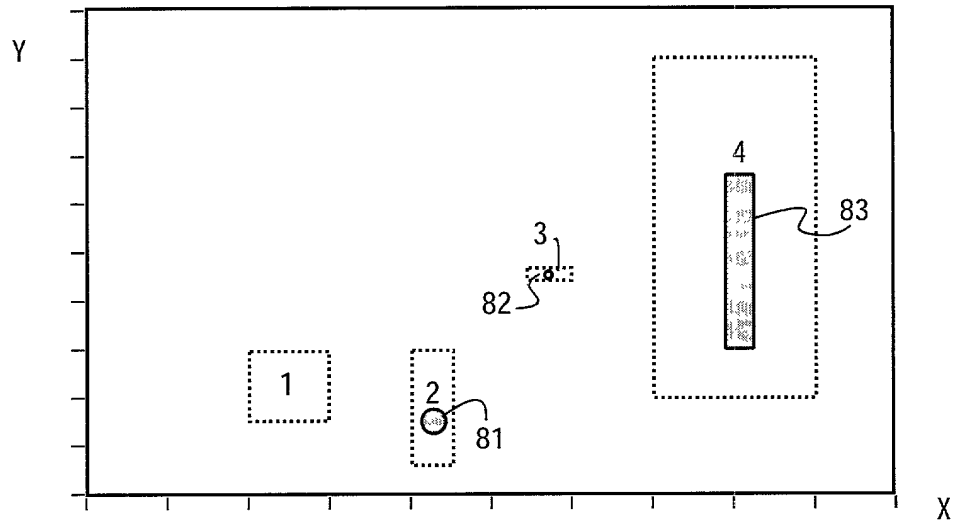

Y
4
83
3
82
1
2
81
X

Fig. 8

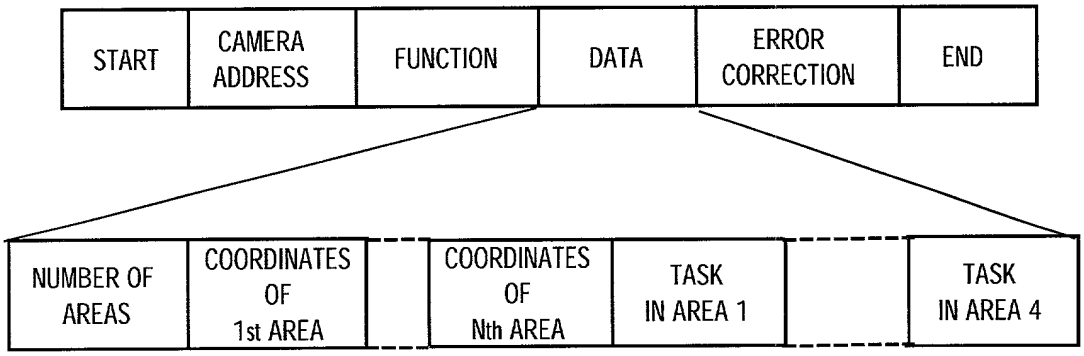

START
CAMERA ADDRESS
FUNCTION
DATA
ERROR CORRECTION
END
NUMBER OF AREAS
COORDINATES OF 1st AREA
COORDINATES OF Nth AREA
TASK IN AREA 1
TASK IN AREA 4

Fig. 9

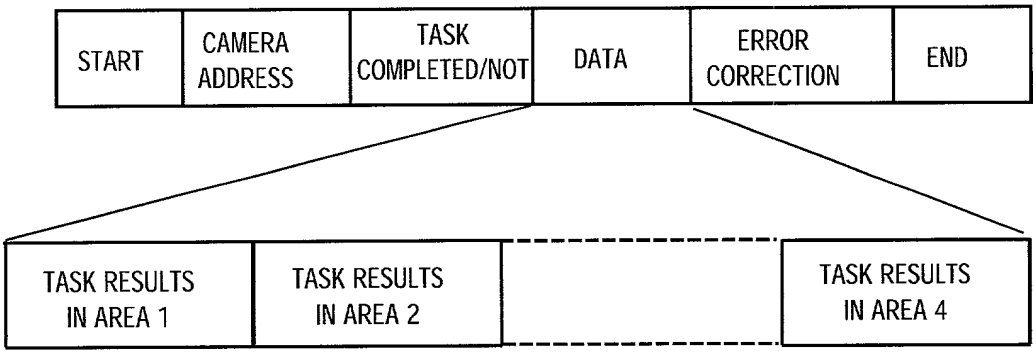

START
CAMERA ADDRESS
TASK COMPLETED/NOT
DATA
ERROR CORRECTION
END
TASK RESULTS IN AREA 1
TASK RESULTS IN AREA 2
TASK RESULTS IN AREA 4

Fig. 10

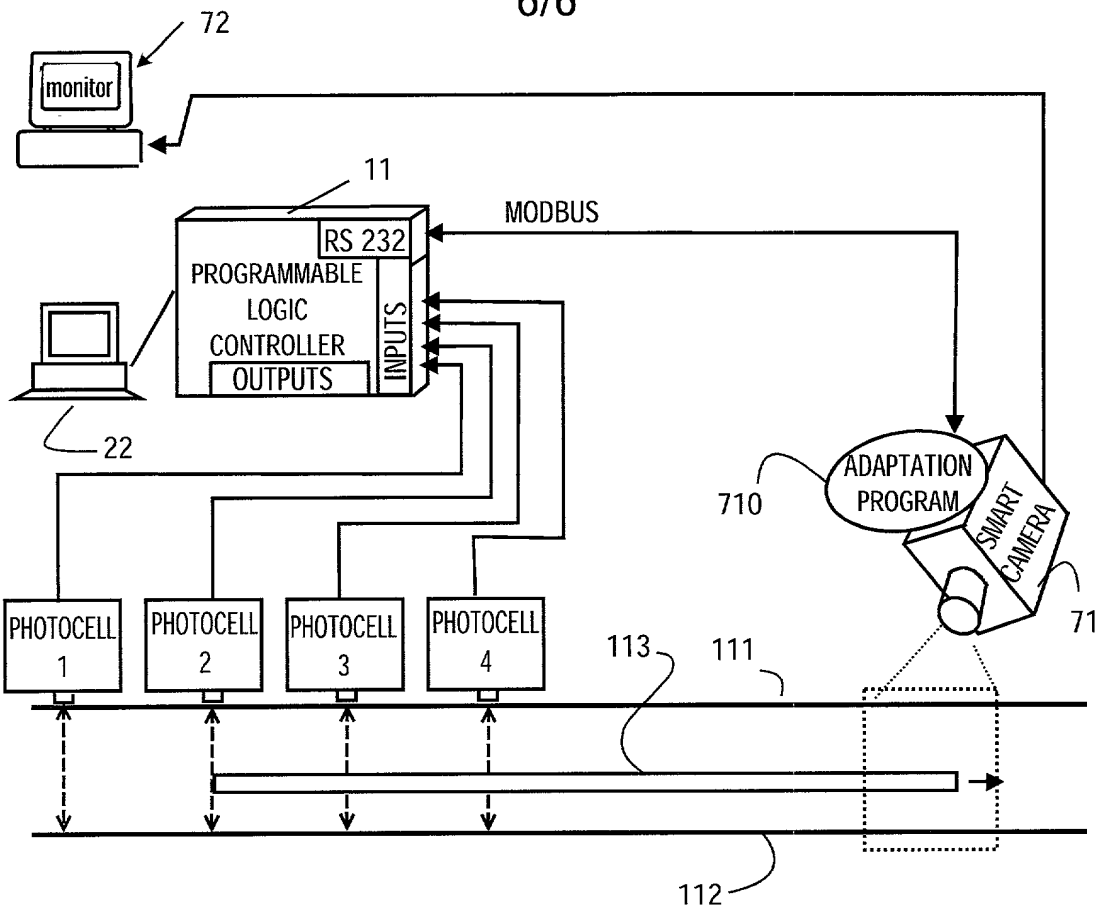

72
monitor
11
MODBUS
RS 232
PROGRAMMABLE
LOGIC
CONTROLLER
INPUTS
OUTPUTS
22
710
ADAPTATION
PROGRAM
SMART
CAMERA
71
PHOTOCELL
1
PHOTOCELL
2
PHOTOCELL
3
PHOTOCELL
4
113
111
112

Fig. 11

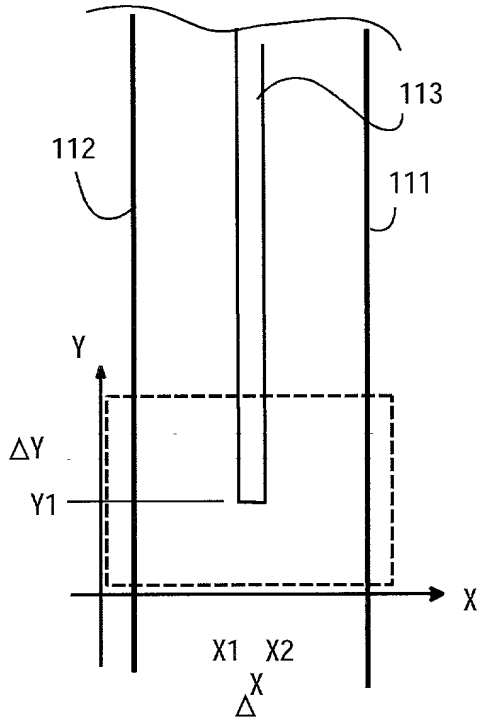

113
112
111
Y
ΔY
Y1
X
X1
X2
X
Δ

Fig.12